LOADSTAR LETTER #64

IFLI Demystified

By Todd Elliott with thanks to Arndt Dettke for technical accuracy. Maybe you have seen them before. Some of you may have wondered how they were done. Some of you may have heard about them in hushed tones and awed voices. And in Loadstar #176, **FileMaster** can now display these magnificent pictures on your c64. Just what is the IFLI mode? Well, wonder no more! Even the hardcore democoder can benefit, so put down your TurboAssembler and read the following pronto. ☺

IFLI, is simply an 'interlacing' of two FLI screens, hence its full name, *Interlaced Flexible Line Interpretation*. I will not delve into the nuts and bolts of the FLI mode, as this was more than adequately covered in detail by Robin Harbron in Loadstar Letter #56. Rather, I will simply refer the individual FLI screen as a MCM (Multi-Color Mode) bitmap for the sake of clarity and ease of understanding as a lot of readers are quite familiar with that graphics mode.

Let's start with the basics of a MCM bitmap: It is a graphics screen having a range of 160x200 pixels with a 16-color palette. But such beauty comes at an expense—memory, as in nearly 9.5Kb worth of RAM real estate. The VIC-II chip that creates the MCM graphics screen on the TV or monitor continually updates it 60 times a second for North American systems.

This is where some eccentric and nocturnal programmer probably said, 'Wait a minute!' and started fiddling with the screen refresh of 60 times a second and halved it. Now, we have two 30-screen refreshes going on—why not dedicate a MCM bitmap to each half? Thus, the interlaced MCM bitmap was born. The interlacing concept now deals with two MCM bitmaps, and thus, the memory hit increases to 18.5Kb of precious RAM.

Now, that two MCM bitmaps can be interlaced, the bigger question remains; Why do it? Just simply because the human eye can be fooled quite easily, and I do not need David Copperfield to tell you that. ☺ More specifically, the human eye can be tricked into believing that there are more *colors* and *fineness* to the graphics screen if interlacing was used.

Normally, the screen updating occurs 60 times a second. To the human eye, things seem quite stable. The colors, pixels and sprites are where they are supposed to be and are quite what they should look like. Even when the screen updating is halved to 30 times a second, things are still stable for the human eye to notice

any difference. We have what are essentially two rock solid screens to work with—we simply need to interlace them so that each screen will alternate 30 times a second.

Imagine this; we have a white pixel that appears in one spot on the first screen and a cyan pixel that appears in the same exact spot, but on the second screen. To the human eye, the white pixel will appear, then the cyan pixel will appear, and in this fashion, will alternate 30 times a second. This happens too fast for the human eye to discern the difference and as a result, both colors will *blur* at that pixel location to a **new** color!

With this phenomenon, interlacing offers a whole new world of color possibilities that were previously not dreamt of when the c64 was introduced. At last, the MCM bitmap can be free of the shackles of a measly 16-color palette, and can exhibit, theoretically, upwards to 136 colors! Arndt Dettke has created a color palette containing all 136 colors for the PC platform and as well as Godot's IFLI color palette. Email him at god.Adettke@t-online.de for more details.

The programmer or graphics artist can create a MCM bitmap screen and make a duplicate bitmap. The pixel data will remain the same for both screens; it is just that the color data will be different. The colors are carefully selected as to create new colors and overall, create a better-looking picture.

Unfortunately, some colors do not go well with other colors and as a result, *flickering* occurs. This occurs when the first

"Why Does Loadstar Get Such Flak?"

For a year now Robin Harbron has been telling me that demo coders have been somewhat upset with Loadstar for pirating their demos. Anyone who has seen Loadstar knows that we very rarely publish a demo. When we do, we do so because we think the demo is so special that it should be spread around. The majority of our readers aren't online and would never see a demo if we failed to publish them.

I remember a particularly nasty exchange between Disc=overy and Loadstar. We touted and praised their first issue and published excerpts from it, letting everyone know that it was there. Our repayment for that was Email spotted with legalese implying lawsuits and demanding compensation for their *free* publication.

What follows is a two-part exchange between myself and Fungus. Recently a person offered counterfeit Loadstars for sale over the Internet and I called it piracy. To that Fungus gave the following public reply. I have to give Fungus credit because he is the only coder who has ever said anything to me directly.

From: Fungus <fungus@eskimo.com> Newsgroups: comp.sys.cbm Date: Monday, December 07, 1998 1:58 AM Subject: Re: Loadstar Disks for sale
You speak of Piracy, yet you spread demo's without the authors consent for profit... that is REAL piracy! :P

To that I replied publicly:

I don't get the continual misunderstanding here. In other platforms authors seem to get this. They even state in their copyright messages that their code may not be sold as a standalone disk, but may be distributed freely as a part of a larger collection. I own many such CDs and disks, published by reputable companies. Pardon me if I'm wrong, but when you RELEASE a demo to the net, you want thousands of people to see it. If Loadstar has an extra 99 blocks free on side three and includes your demo to thousands of people who would never have seen it at all, how does that harm your demo?

Demos are not very marketable. Loadstar has always received demos from people for purposes of publication and has usually rejected them because we're more into games, programs and utilities. When Loadstar RARELY publishes a demo, it's because we think it's notable enough that our readers shouldn't miss them. In the old days we actually paid hundreds of dollars for demos.

There has been a STANDING offer on this newsgroup for $100 per month for a demo of the month and no one has taken us up on this.

I was not aware that placing public domain content on a disk was piracy. Perhaps it's because Loadstar is looked upon erroneously as a deep pockets company that this criticism persists. For years companies like 8-Bit and Parsec have been packaging and selling PD programs as parts of collections.

Loadstar has never turned a profit from publishing PD, even with our Star Extra series. These disks were geared only at our readers who were NOT online. Naturally those who are online can get these items for free. We have not sold thousands of these disks, and have probably lost money on them.

The recent Roy Batty Demos published on Loadstar and mentioned at our web page at http://www.loadstar.com/ were mailed to us by Roy Batty, and not "pirated" from him. I have no idea how much he was paid, but Terry is a great contributor to Loadstar, and has earned thousands of dollars through us.

Again, there has been a STANDING offer on this newsgroup for $100 per month for a demo of the month and no one has ever taken us up on this. Loadstar has supported the demo, whether you believe it or not.

Fungus replied:
Well, my understanding (which I put in my stuff) in the case of spreading via a diskmag or any other medium that charges more than the cost of the disk alone, would (and SHOULD) get permission from the author(s) before including such material.
Maybe I should have made sure my point has been understood from the start. This is a simple request.. Otherwise I very much appreciate the free spreading. I like people to see my work of course. I won't speak another word of it.

color's luminance value is not on the same or comparable levels as the second color's luminance value. There are a couple of luminance charts published throughout the years, most notably Jim Butterfield's chart in Transactor, vol. #9, no. #6 and in an another chart in the online magazine, DisC=overy #2. The person designing such screens has to keep in mind of which color combinations to avoid. The graphics conversion program, GoDot, limits its color palette for interlaced screens to 55 allowable colors. Thanks to Robin Harbron for the tip that luminance values are the culprit behind flickering.

That should close the book on interlaced mode, except for yet an another heavily caffeinated democoder discovered that the screen can be shifted horizontally to the right by as much as seven hi-res pixels

and put that effect into interlaced screens. Picture this—the first screen will be at the normal 160x200 location—but the second screen will be slightly to the right by one hi-res pixel. Here's a diagram that helps illustrate this concept:

† 1st screen- First 8 columns of hi-res pixels at row 0.

‡ 2nd screen- First 8 columns of hi-res pixels at row 0. Notice that the second screen has now moved by one hi-res pixel to the right.

This concept applies to the entire screen. The first MCM bitmap will always be at its normal position and the second MCM bitmap will always be at the position just one hi-res pixel to the right.

For those who are familiar, there is a normal hi-res bitmap screen option of 320x200 pixels. But that option, while looking nice, is not really used a lot as it restricts color choices. The MCM bitmap mode offers more color freedom but at the expense of a lesser resolution of only 160x200 pixels. But, with the screen shift trick and interlacing, the human eye is fooled into seeing a **320x200** MCM bitmap!

Here's how it works; In the diagram earlier, the color black occupied pixel zero of the first screen and the color gray occupied pixel zero of the second screen. Note that we are dealing with MCM bitmaps here, the actual resolution is at 160x200. But the screen was shifted by one hi-res pixel at the normal 320x200 rate. In other words, one

could say that the second screen was shifted by one/half of an MCM pixel.

The gray pixel in second screen would blend in with the black pixel in the first screen. However, this gray pixel does not catch the entire black pixel in the first screen, just blending with only *half* of that black pixel. The other half of that black pixel in the first screen will show through. The gray pixel will also blend in with the lighter gray pixel (which is to the immediate right of the black pixel) in the first screen, but not all of it. This continues on for the entire screen, where a single MCM pixel residing in the second screen will blend in with **two** MCM pixels residing in the first screen.

This results in the improving **fineness** of the resolution of the MCM mode. With interlacing, the skilled programmer or graphican can create beautiful graphics screen that seem to do the impossible -- have more than 16 hardcoded colors and at an higher resolution than 160x200.

Some specific FLI info in the overall interlacing scheme of things: An FLI screen is essentially an MCM bitmap, but with a little bit more freedom in color choices than a standard MCM bitmap. This freedom comes with a cost in a huge memory hit —16.5Kb of RAM as opposed to 9.5Kb of RAM for a standard MCM bitmap. With interlacing, two nearly identical FLI screens are used and the second screen are shifted one hi-res pixel to the right. Altogether, we are talking about 32.5Kb of memory being used, which is just slightly more than **half** of the available c64 memory! Also, the

FLI mode is computationally intensive—the processor simply does not have enough time for anything else. IFLI screens are almost never used for games or other computing activities. However, they are simply gorgeous to look at, and that is what IFLI's do best—as standalone screens for sheer viewing pleasure.

Lastly, here are the nuts and bolts on the IFLI mode itself. The most important thing is to get the FLI mode working properly. The interlacing itself is not as hard as getting the FLI tricks done smoothly. For more information on how to set up a FLI screen, please refer to Robin Harbron's FLI article in Loadstar Letter #56.

Next, we need to place the two FLI screens into RAM. There are four VIC-II banks, and right off the bat, banks zero and two are unavailable, as the CHARROM ghost images would interfere with the screen image. Place the first FLI screen in VIC-II bank one ($4000) and the second FLI screen into VIC-II bank three ($C000).

Once your program has prepped the two VIC-II banks with bitmap and color data, it should simply call an IRQ routine that does the actual interlacing and should be called thereafter whenever the rasterline starts at zero, at the very top of the screen. This routine should check a toggle flag to determine which FLI screen to display. (See Line 01.) A single STA will simply choose the appropriate VIC-II bank to display either the first or second screen. (See Lines 04 or 10.) If it is the first screen, an another STA will ensure that the screen will remain at its original position.

(See Line 06.) If it is the second screen, an another STA will shift the entire screen by one pixel to the right. (See Line 12.) Then, it sets the toggle flag appropriately. (See Lines 07 or 13.) Next, it sets up an another IRQ to be called at rasterline 49. Here's the relevant machine language subroutine: (Note- The labels are patterned after the ones used in Mapping the 64 by Sheldon Leemon of Compute! Publications.)

```
ifli'switch =*;
Switches screens
01   lda iflag; check
IFLI toggle flag
02   beq +
03   lda #$02; select
VIC bank 1
04   sta ci2pra;
switch video banks
05   lda #%00011000;
move the screen back
to normal
06   sta scrolx
07   inc iflag; toggle
the IFLI flag
08   beq ++

09 + lda #$00; select
VIC bank 3
10   sta ci2pra;
switch video banks
11   lda #%00011001;
shift the entire
screen one pixel
12   sta scrolx
13   dec iflag; toggle
the IFLI flag

14 + lda #<fli
15   sta iirq
16   lda #fli
17   sta iirq+1;
wedges in the FLI
routine in c64's
interrupt scheme

18   lda #$1b
19   sta scroly; clear
MSB of raster compare
20               ; need
to change RASTER
register for IFLI mode
21   lda #$31; start
raster line for IRQ FLI
routine
22   sta raster
23   inc vicirq;
acknowledge raster
interrupts
24   pla; restore
registers
25   tay
26   pla
27   tax
28   pla
29   rti; and exit the
subroutine
```

The second IRQ routine, called at rasterline 49, does the grunt FLI work. The FLI routine was originally the one used in the VIDEO FLI'ER program by Brian Ketterling, which appeared in Loadstar #166. However, that routine, while it worked fine in standalone FLI viewing, was not in sync when it was interlaced. There would be white speckles or lines appearing in the first visible rasterline. Simply put, the FLI routine did not start on the exact moment required by the interlacing routines. I tried every known cycle-counting trick in the universe, to no avail, in trying to solve this timing problem.

After some few days later, I remembered this article in an online magazine, C=Hacking #3, written by Pasi Ojala concerning the usage of sprites to synchronize the VIC-II chip. In summary, Pasi used sprites at certain locations to force the VIC-II chip to behave in a certain way. Once the program has done that, then it knows that it has 'x' number of cycles left to execute really neat VIC-II tricks. I figured, why not set up a badline in rasterline number 49 instead of 50 as normally should be done? A badline will force the VIC-II chip to behave in a certain fashion, and since it was in rasterline number 49, the border would be there to cover up any mess, if any at all. Once I did that, the FLI routine finally fell on the exact moment for the VIC-II's liking in interlace mode and the IFLI routines finally **worked**! So, take note, hardcore democoders- You can use a badline as a means of synchronizing the VIC-II chip for further effects.

When the FLI routine is done displaying the picture, the FLI routine would then call the first IRQ routine that switches the screens and trigger it at rasterline zero. The process starts all over again, etc. This is essentially an endless cycle, all interruptible (IRQ'ed).

The latest version of SuperBoot, now called FileMaster, can now read FunPainter II graphic files, either compressed or uncompressed. I chose FunPainter II as a supported format because GoDot, a graphics conversion program, uses it as the primary IFLI format. With GoDot, a user can virtually get any .GIF or .PCX and convert and manipulate it to a FunPainter II format and view it in its full color glory on the c64 with SuperBoot. Even if you will not program or design IFLI pictures, at least you can have some understanding as to how it works and you can appreciate all the more the pictures you view. Enjoy.

What's With Label Prices these Days?

By Jeff Jones. I remember the first time I purchased a few thousand tractor-fed address labels, I spent $6.00 back in 1985. A while back a minister friend of mine commissioned me to create some on-the-cassette labels for him as he went off to Detroit for a revival. Back then I primarily used my now shelved Epson Stylus Color II inkjet printer. I went off to Office Depot in search of cassette labels. As I scanned the shelves, I noticed the very high prices for a few sheets of self-adhesive labels. Address labels were the cheapest, some ringing in at under $10 per pack, but any other type of label seemed way too expensive. These thin bundles of 20-50 sheets were all at least $20.00 per pack. To my surprise, the cassette labels I searched for were more than $50.00. I called the pastor and told him my costs, feeling that he wouldn't believe me. I had only planned to charge him around $50.00 in the first place. This was already a disaster.

Recently I began making Fender's Doggerel Days CD labels and wasn't shocked when I spent $27 for 50 sheets of die cut adhesive paper. If you want color, try $40 after tax. Once again I looked around and there was not a single thin packet for sale for less than $20.00.

Here's what I hope happens: Home Pride Buttertop Bread is the best bread on earth, and my wife and I loved it for years. We paid more for it because it was good. When it reached $1.85, we decided it wasn't that good and started buying Brookshire's Split Top for .$99. We stopped buying it for more than three years. Now all of a sudden it's on sale for $1.09 and regularly priced at about $1.35.

At Loadstar we regularly use Post-It tape to label disks for in-house use. Post-It notes aren't thought of as being permanent, but I've never seen a Post-It tape wear off. I say we should revolt against the die cut barons and use good old Post-It for three years until the prices drop.

Yeah, right – I know we'll keep on paying these exorbitant prices for labels. I just wish we could somehow convince the manufacturers that they are overcharging us for these labels. They simply aren't worth the price. Judi *did* show me that Quill offers labels at lower prices. Quill does claim to only deal with companies though I have never had a problem buying from them.

The X1541 Cable

Reprinted with permission from Christian Janoff. You want to transfer files from your PC to a Commodore disk drive and vice versa? Then you'll need this!

This is a description of the **X1541 adapter cable** which is required for connecting your Commodore disk drive (C=1541, C=1571 and any drive that uses the serial bus) to a PC. The cable connects the PC's parallel printer port (LPT) and the usual serial port of the Commodore drive.

Building the cable...

...is **not** difficult. Really! You just need a soldering iron, some solder and the following parts:

- 1 x DB25 plug, **male** (for your parallel printer port)
- 1 x case for the DB25 plug.
- 1 x 6 pin DIN plug, **male** (for your C= disk drive). You can see in the schematic below how the plug looks like on the next page.
- 1 x case for the DIN plug.
- 1 x cable with 5 wires. If you buy a shielded cable (somewhat more expensive but helps to minimize interferences), it just needs 4 wires (because the shielding is used for the GROUND-line, see below). Don't make your cable too long, 1-2m (or 40-80") should do.

Soldering together: Now you just have to solder the right pins together, following the schematic (pin 3 of the Commodore plug goes to pin 1 of the parallel port plug and so on...).

Some important hints:

- Don't forget to connect the pins 2 and 15 of the parallel port plug.
- Yes, pin 1 of the Commodore plug is not used.
- Use the shielding for the GROUND line (pin 2 of the Commodore plug) if you have a shielded cable!
- The schematic shows the *inside (solder side)* of both plugs!

Another important hint: *Never* connect PC and Floppy while they're turned on! Always *first* switch off, *then* put the cable in. Do not use an on-board parallel port, you should use a separate cheap IO card instead.

The software

You can now connect the disk drive to the PC (first turn off the

devices, see above!) and start using your favorite software: If you know the Norton Commander, then 'Star Commander' is something for you. If you prefer Borland's TurboVision style (like me), use 'Trans64'. You can get these programs at my "connections to other machines" web page.

It does not work? If something doesn't work, verify that your cable's pinout complies to the schematic and that it's not too long. There are some other possibilities as well:

- **The drive motor always spins and the red LED is on:** Cut the reset line. Most programs work fine without this line.
- **Errors during transfer / blinking red LED:**
- Make sure your software is correctly configured and your disk drive is ok.

- Maybe the distance to a monitor (or to another device) is too small (better get a shielded cable).
- Or the cable is too long (mine is about 1 yard long and works fine).
- **It doesn't work at all:**
- Does your parallel port work? Eventually try a new (cheap) I/O card with parallel port.
- In the BIOS setup of newer PC mainboards there's a possibility to choose several other parallel port modes besides the 'SPP' mode (which is suitable for the X1541 cable). There you should turn **off** 'EPP', 'ECP' or 'Enhanced'. You should turn **on** one of the options 'SPP', 'Compatible', 'Normal', 'Standard' or 'PS/2' instead.

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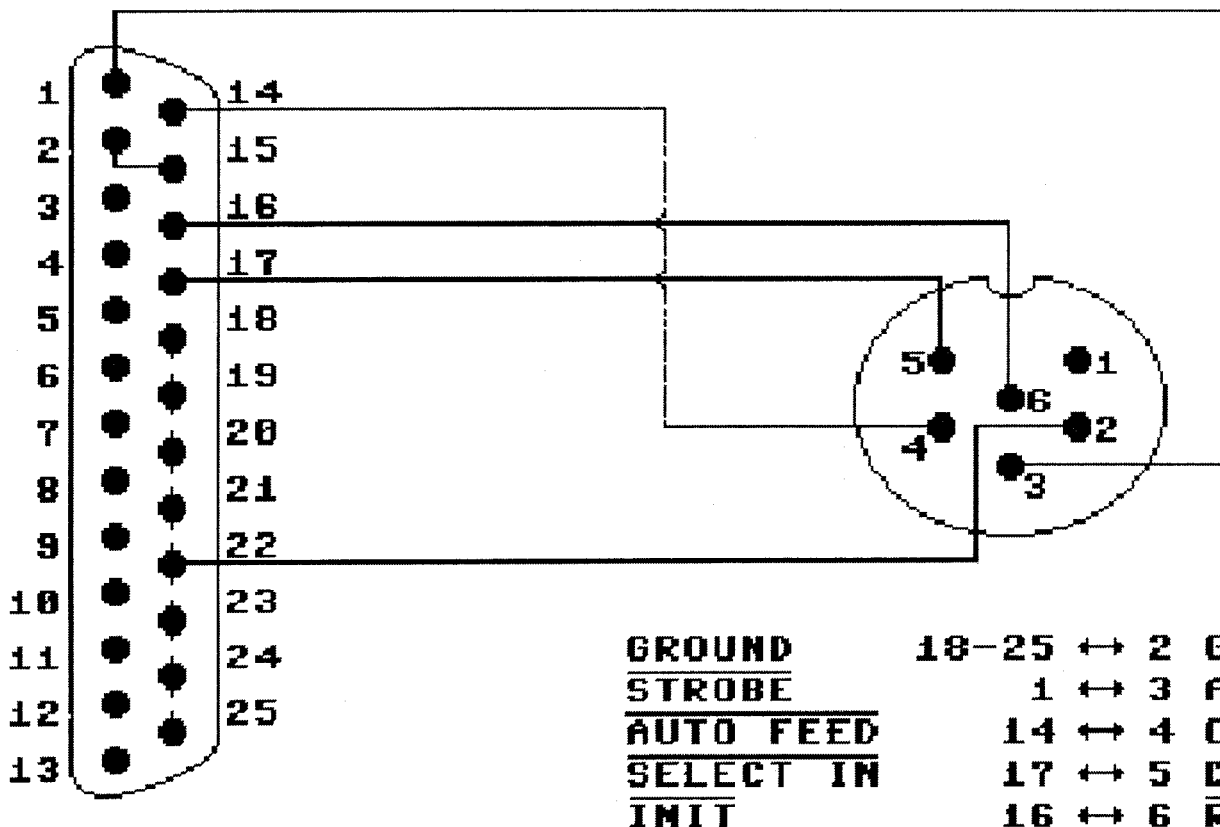
USENET Rumblings And Reader Mail
Re: What is your favorite C64 memory?

This is a rather old post from Marc Walters which I meant to publish a lot sooner:

Hmmm. A couple stand out for me.
1. Receiving the game development software (and game sourcecode) from one of Ozisoft's [1] better programmers. I found out later that the source for one of the games is sort of historic- almost certainly the first smooth vertical scrolling Xevious clone. Anyway, I started programming in ML as a result of that, otherwise I'd now still be a 'gamer-lamer'.

GROUND	18-25 ↔ 2	GROUND
STROBE	1 ↔ 3	ATN
AUTO FEED	14 ↔ 4	CLOCK
SELECT IN	17 ↔ 5	DATA
INIT	16 ↔ 6	RESET

The X1541 Schematic

Phew.

2. My sister's 21st party, after downing two bottles of sherry went to my room, loaded up Jeff Minter's " Iridis Alpha", turned out the lights and...played for hours. It was a religious experience. I think. Because I nearly completed the damn thing.

3. Playing "Lords of Midnight" for about 18 hours straight (I had food slipped under my door, and to hell with personal hygiene) and finally crushed the Foul One in glorious battle - none of that pansy-assed slinking around to steal the Ice Crown nonsense.

4. Speaking to Jeff Minter (grovel). Interviewed for an article in an Australian magazine. Still have the audio tape - now gilded and enclosed in a 50 kilo block of Lucite. For any readers of the abridged version that later appeared in Commodore Network - that was the printable stuff :)

5. Best ever memory has to be getting the letter from Fender Tucker of **Loadstar** informing me that I'd won the 1993 programming contest. It's the first and only contest I ever won. Marcmwalters@attila.apana.org.au

LOADSTAR Corrupts some kids

Hello again Fender, Judi, and Jeff;

Another short note with some pictures from Alaska. They are a little late in getting to you due to the flurry of activity in trying to get back to normal after a three week vacation. The closest we got to getting chased by a grizzly bear is shown in the picture of our kids
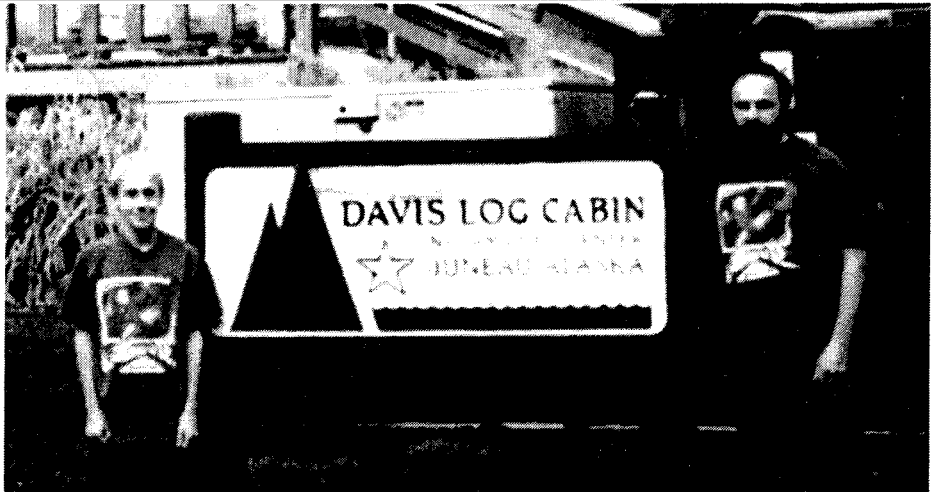
and the bronze bear. The kids Alyssa-2 yrs, Heidi-7, Anneke-l0 (anneka), and Garret-12 all had a great time too. My brother-in-law had us all flown to his cabin out on an island for some peace and quiet and great fishing (15 lb. silver salmon in photo) . The island we were on has the highest concentration of grizzly bears on earth (1 per square mile) and is 1700 sq. miles in size and we only saw one from the air on the way out.

I was glad to read in LS LETTER and Loadstar that Fender got to take a trip to Lansing IL. sounds like you had a good time. Also great job on MOOJUB and HYPERSTORY. Keep up the good work!

Douglus Jenkins
Avon MN 56310

Jeff: Well, you know that dressing your kids in Loadstar T-shirts is fodder for the lawyers in any custody suit.

And one grizzly per square state is too much for me. I am a-scared of bears!

Revitalizing Loadstar

Jeff, I may be out of order, but if Fender (and company) would really like to get Loadstar revitalized I think:

1) That back issues (up to 2 years ago) would need to be released for redistribution without cost.

2) That subscription costs should be lowered - submitting programmers paid less to compensate.

3) More publicity -- active participation at Delphi, comp.sys. cbm, etc.

4) People want to see and hear more from Fender -- he must take an active interest in the online community (even though he probably detests it.

I don't want to see Loadstar disappear like many others but business is business. Please pass my concerns over to the big kahuna. They're opinions shared by many.

Dick Cunningham.
--- Oasis Commodore BBS and Web Center.... http://people. delphi.com/oasiscomm A Touch of Class: Commodore Classics.. http://people.delphi.com/ oasiscomm/acugvcs Commodore BASIC Ring.................. http:// people.delphi.com/oasiscomm/ cbring

Automatic Sound

Dear Jeff,
Hi Jeff, You have written lots of stuff for Loadstar for sometime. For generic routines, and certain things, I wonder where you turn? I am looking for sound effects. Make a loud interesting tone. Is there a resource you can think of, you might use? I am wanting to find just ML code or assembly to create a sound. As opposed to BASIC. And wanting probably something with more life to it than might be gotten for example. with the SOUND command.

Andrew Vardy

avardy@morgan.ucs.mun.ca

Jeff: There's a program in The Compleat Programmer called SFX generator that's pretty cool. Also on a recent Loadstar, we re-published Racketmeister, which is a lot like SFX. Nothing could be easier than SFX. You create a bank of sounds from a program and then save relocatable code that you simply sys to.

Hello,
Just read on usenet that you will be leaving Loadstar soon-bummer! I just wanted to let you know that you will be sorely missed. I really enjoyed your work, and looked forward to each issue.

I have been a loyal subscriber since 1993- the year I returned to serious Commodore computing. I have never been without a Commie since 1983, but I was not very active much after 1988- it sat in the closet most of the time. I would dig it out every now and then to play a few games and relive old memories. Then one day in spring of 93, I dug it out and logged on to a local bulletin board, and got hooked on BBSing. I had a friend who had a 386 PC which had a 2400 baud modem. Man, that seemed turbocharged compared to my 300! I asked a few people if I could get a faster modem for my C=, and was almost laughed at. I became convinced that the only way I could keep up with my buddy was to get a PC. I was just about to purchase one, when one day a flier arrived in my mailbox advertising Loadstar. I had never heard of it before, and to this day I will never know how they got my name (thank God they did). I will

never forget how stunned I was that somebody was still making commercial software for the C64, and the sheer astonishment I felt when I saw the ad for an outfit called CMD. They sell WHAT for a C64? I was inclined to think it a joke at first, but I subscribed. When my first issue arrived, I was most impressed by it, and immediately contacted CMD and went shopping. Soon, my Commie was online with a 14.4 modem, and had far more RAM to play with than my pals PC, much to his dismay (I'll never forget the look on his face when I showed him how fast I could download a file- it was classic). To this day, my only machine is a C128, with all the CMD goodies, and I have no desire to jump platform. I am indebted to all you at LS for saving me from jumping ship. I seriously doubt I would have ever learned that the CBM world was not only alive, but bristling with life were it not for Loadstar.

The day I receive the last issue of LS will be a sad day indeed.

I wish you good luck in all your endeavors, and look forward to reading LS Letter.

Sincerely,
John Hoepker

Jeff: Good testimonial, John. In 1999, I won't be that far from Loadstar. I'll still be doing the Loadstar letter and occasionally write programs.

Dear Fender,
I thoroughly enjoyed your dissertation on the early computers in Puzzle Page #174. I never thought of my childhood toys in that vein, but your

description sounds so logical, I think it has to be a correct one.

I have thought of a problem which one of your programmers can, perhaps, answer. I've seen many programs that figure compound interest and that amortize mortgages. The program I want is a combination of the two.

I have some investments which automatically reinvest the dividends each month. I want to run a program which will compound the interest monthly but which will accept:

1   The initial investment
2   Each monthly dividend (which will not be the same amount each month)
3   And produce the final value after each month's input.

My reason is that some of my mutual funds are continually of less value than the total of both my original investment and the dividends paid. I would like to be able to put those figures into a program, as I described above, with a set interest as if I had invested those amounts in a bank account. Then I could compare whether I have made a good investment or would have been better off placing the moneys into a bank account.

I sincerely hope someone may be able to come up with such a program.
Thanks. Charlie Duncan

Jeff: I hope that programmers out there re listening. I know that we've published a number of programs along that line. The trouble is we published so many programs now that it's getting difficult to find them unless you

know the name of the program. I would dare wager that a combination of programs might do what you want. There is also a program and tutorial called Investor, on the Compleat Programmer, which discusses writing such programs.

Dear Mr. Jones,
   Hello!
   MERRY CHRISTMAS! HAPPY NEW YEAR!!!
   Last week, I received My issue of LOADSTAR Letter #63- first Letter I got in over two years. It is Great. I liked the article about the Chicago EXPO, and the Picture of Your Lovely Wife.
   Shelia the local Librarian did not agree with all of Your PERKS OF BEING A MAN article, but I did.
   Please tell Fender I got some C64 Books from Lee Novak, and that I did give him a little something extra besides Postage for being a Great LOADSTAR Person. WE LOADSTAR People must all stick together.

SIGNED: BULWINKLE, A.K.A. Jeff Puffer

Jeff: Alright, Alright! Tell your librarian friend that women tell jokes about men, too. The following was passed around at my wife's job among the nurses:

New classes available

A new two-year degree is being offered at LIFE UNIVERSITY that many of you should be interested in: Becoming A REAL MAN.

That's right, in just 2 years, you too, can be a real man. Please take

a moment to look over the program outline.

FIRST YEAR:

Fall Schedule:
☺ MEN   101   Combating Stupidity
☺ MEN   102   You Too Can Do Housework
☺ MEN   103   PMS- Learn When to Keep Your Mouth Shut
☺ MEN   104   We Do Not Want Sleazy Under things for Christmas

Winter Schedule:
☺ MEN   111   Wonderful Laundry Techniques
☺ MEN   112   Understanding the Female Response to Getting in at 4 AM
☺ MEN   113   Parenting: It Doesn't End with Conception
☺ MEN   114   Get a Life, Learn to Cook

Spring Schedule:
☺ MEN   121   How NOT To Act Like an Ass When You're Wrong
☺ MEN   122   Understanding Your Incompetence
☺ MEN   123   YOU, the Weaker Sex
☺ MEN   124   Reasons to Give Flowers

SECOND YEAR:

Fall Schedule:
☺ MEN 201 You CAN Fall Asleep Without It
☺ MEN 202 Morning Dilemma: If It's Awake, Take a Shower
☺ MEN 203 How to Stay Awake After Sex
☺ MEN 204 How to Put the Toilet Seat Down

Winter Schedule:
☺ MEN 211 The Remote Control: Overcoming Your Dependency
☺ MEN 212 How Not to Act Younger Than Your Children
☺ MEN 213 You Too, Can Be a Designated Driver
☺ MEN 214 Honesty: You Don't Look Like Dean Cain-Especially Naked

Spring Schedule:
☺ MEN 221 Omitting @#%&*! From Your Vocabulary
☺ MEN 222 Fluffing the Blanket After Farting is Not Necessary
☺ MEN 223 Real MEN Ask for Directions
☺ MEN 224 Thirty Minutes of Begging is Not Considered Foreplay

Jeff Again: Not to get too political here, but I'm particularly annoyed by the term, "real man," which implies that there is some rite of passage. The only thing a woman has to do to be a woman is be 18. Women also get away with declaring themselves beautiful when they are ugly as goat cheese.

A couple of courses I would add for women would be:

☺ WOMEN 101 Sometimes it's your fault
☺ WOMEN 110 Just laying there isn't foreplay either
☺ WOMEN 120 Checking the toilet seat before sitting
☺ WOMEN 130 Philosophy: Letting down both toilet lids for fairness
☺ WOMEN 140 Golden Rule: It's NOT okay to hit a man for any reason, especially a dirty joke.

☺ WOMEN 150 Getting Over Your Smuggness and Understanding he Would Have Climaxed Alone!
☺ WOMEN 151 Just Laying There Won't Bring You Your Climax.
☺ Just Laying There (Fill In The Blank)
☺ WOMEN 201 Men don't have to appreciate your gifts.
☺ WOMEN 204 You, too can say you're a jerk!
☺ WOMEN 210 You, too can say you're sorry.
☺ WOMEN 301 Men have real feelings
☺ WOMEN 310 How not to berate your man to his face
☺ WOMEN 330 Understanding he doesn't love his computer or any inanimate object more than you
☺ WOMEN 340 You, Too can kill bugs
☺ WOMEN 401 Maybe all his "childish sulking" today means you were a jerk earlier
☺ WOMEN 410 How to argue without using the word, castrate.

Dear Jeff,
As a college student who uses Win-based machines for a good part of the day, I haven't had much Commie time. Recently I dug out some demos published on earlier Loadstar's and ran them with the SuperCPU enabled. A few had to be Snapshotted and re-compressed to get around Bit-Imploder. My favorite has to be Elwix/Style's Chaos 101. The chaotic drawings fill in very quickly. The last section that usually had to be run overnight really got a boost!

After about half an hour, the design was already very large and

the algorithm started to corrupt itself; it started growing out of the border.

On another note, I have been trying to establish a null-modem link between my SC128D's Turbo232 cart and my C's Com1 port. The PC doesn't seem to set up the port correctly (running Win9x). If you have any information, that's great. If not, that's ok.

Also, I have found a good Windows-based emulator to be CCS64. It supports a number of screen resolutions and is very difficult to crash with fancy tricks. The shareware version also has a lot of nice features.

Final note: I am currently working on a re-write of a Gazette Section program called Megamorph. It generates a sequence of 'morph' frames (up to 99) between a source and destination bitmap (2-color hires). The core will still be the same, but it needs updated, like a file-requestor and SuperCPU optimization. I'll keep you posted.

Keep up the good work!

-Ray Parrish
H.A.M.S. & Codemeister 128 author.

Jeff: I suggest building the X41 cable rather than the null modem route. Of course if you have a 1581 or FD-2000 drive, you could just get Little red reader and transfer your files that way.

ARRRGH!

Hello, Jeff Jones-

First of all, let me give you the good/bad news. The good news is

that I will start work this Monday, after 3 years of arduous study. :) The bad news is that my attention towards my CBM 'hobby' will be vastly reduced. :(Hopefully some kind of routine can be developed where I can have a rhythm of sorts that I can work on my CBM hobby on my own free time.

Also, just for your information; I finally added 4-drive support to geoWrite 128 v2.1. I think someone commented that either you or Fender or both of you really don't like GEOS and can certainly understand that. But since geoWrite is a major application and is the most heavily used, this patch can benefit a lot of people with power systems and overcome some of its shortcomings. I haven't decided yet if I should release the patch outright or release it through Loadstar 128.

Best,
-Todd Elliott

Jeff: This is indeed sad news. Todd is a valuable Commodore resource.

Dear Jeff,

I saw the note posted on the newsgroup and I was wondering how serious is it. I get mine through my club, and since I am the president I looked up how many issues we have left-only 3. Now my question is how do I resubscribe? I don't want to subscribe for a full year when you may stop in December 99. So, is it possible for us to move our subscription into the pay by the month plan after the 3 issues are used up? And if so what do I tell the reps on the 800 sales line?

Also while I have your attention-do you know of a current address for Gene Barker who wrote The Compression Kit? I and a few others were in contact with him and he was going to send the source code so that we could take out the dongle protection and make the program public domain. I also never got to ask him if he would send the game (or whatever there was of it) Messiah III so that it could be released as well. And if it was not finished we would do that as well-if enough info was provided so we could (plot, characters, and what exactly they were going to do). Any information that you could provide would be wonderful. Thanks in advance.

Dan Barber
xy3951@epix.net

P.S. If Loadstar does die (and I pray it don't), I wish to you thank you and Fender for the many years you have given us. You have held a great part of Commodore users together, and we will always be grateful.

Jeff: You can't subscribe beyond December 1999. Our rates will be pro-rated. You can also subscribe monthly and pay by check or credit card every month.

We are not accepting subscription money for issues past #187 but we will make it easy to subscribe through #187. If you pay in advance (subscribe), we are charging $5.85 per issue. If you are paying by the month, we charge $7.95 per month. Keep in mind that Loadstar might indeed continue past #187 if subscriptions and monthly

customers support it. Now's the time to spread the word. There *are* enough Commodore users out there, and if they at least look into the monthly option, Loadstar might be around for years more.

I haven't spoken to Gene in years and don't have his current address. I don't know how willing he would be to release his software to public domain after investing so much time and money into it.

Messiah II was not released because the manual turned out to be huge and they had trouble getting it printed for a good price. I suggested that he try an electronic manual, but Gene wanted to use the manual as protection (You would have to enter words from the manual in order to run the program).

I've been kind of hard on Gene (a very nice guy) since then for being behind the times when it comes to software protection. Protecting software just isn't a nice or practical thing to do. Gene's paranoia is probably tied to the hype from his dongle salesman.

Next Generation Amiga Architecture

Amiga Announces Alliance with QNX for Next Generation Amiga Architecture
Amiga Inc. has announced an alliance with QNX Software Systems Ltd. to utilize the QNX realtime operating system (RTOS) as the foundation for the Next Generation Amiga architecture. "The Amiga shook the industry in the 80's with world leading multimedia architecture." said Jeff Schindler General Manager of

Amiga Inc. "QNX's RTOS resembles many of Amiga's unique qualities. It provides the foundation in reaching our vision for the rebirth of Amiga in the new millenium."

"We see this alliance as a powerful combination of superior OS technologies, common corporate cultures and shared business vision." said Dan Dodge, Chief Technology Officer and Co-Founder of QNX Software Systems Ltd.

Building upon the QNX OS foundation, Amiga Inc. will work with QNX to add features and functions needed to create the Next Generation in Computing, as Amiga did in 1985.

Next Generation Targeted Features

Operating System Core Features

- Scalable and modular design
- Fully Protected Preemptive Multitasking; with processes and threads
- Efficient and compact OS (under 4MBs)
- Full 32 bit
- True RTOS
- Virtual Memory support
- ROM-able
- Multi Processor support
- Distributed processing support
- Open standards architecture
- Support for industry standard API's

Multimedia

- High performance 3D (Open GL)
- Full 24-bit true color
- Support standard TV, SVGA and resolutions up to HDTV
- Multi-Media Gaming

centric
- Real-time animation (audio/video/graphics)

Internet/Networking

- Network centric architecture
- High performance Internet solutions
- Full Java support
- Consumer networking

Convergence

- Support new digital interface standards
- Amiga convergence API's where no standards exist
- Support leading convergence processing hardware

Frequently Asked Questions

Q: Should Amiga developers start programming for QNX now?
A: No. While QNX is the foundation OS, Amiga in partnership with QNX will add user interface enhancements, more multimedia support and a host of other convergence features. This will be released through Amiga Inc's developers program.

Q: Will I have to re-write my application to run on Next Generation Amiga's?
A: Yes. The new OS has a programming model that is similar to the Classic Amiga's, but also sufficiently different. In particular, the new OS features processes and threads (a "thread" is like an Amiga Process/Task), virtual memory and a very clean microkernel architecture. All access to hardware is through drivers, so if your application "hits the hardware" it will not work. Most well written applications should be able to be ported, but to take full advantage of the new architecture you will want to take advantage of the new

APIs. We also intend to offer significantly better development tools than are currently available for the classic, which should ease the transition.

Q: How about my Classic applications? Will they run?
A: For the Development System, we are investigating either an "Amiga Classic PCI card" or an "Amiga Classic Emulator". Therefore well behaved 3.1/3.5 Amiga Classic applications should work.

For more information about QNX Software Systems, visit www. qnx.com.

Are You A Monogamous Computer User?

Don't be. So many times during my ten-year stint as associate editor extraordinaire at LOADSTAR, I've seen the following letter written almost identically from purchasers of Amigas and IBMs:

Dear LOADSTAR,

I recently upgraded to a (insert computer here) and sold my C-64 in the deal. Now I have a computer I barely use as much as my trusty C-64. I would buy another C-64, but it would cost so much to replace all of my software and peripherals that I just can't.

I feel left out in the cold now. Sure, my new computer runs at 300 MHz and has a 10 gigabyte hard drive, but it just isn't my old C-64. You should warn your readers not to sell out completely as I did when they upgrade.

Ex-subscriber

I almost made this mistake myself back in 1988. When I won Softdisk's Codequest '87, I took the $1000 and purchased an Amiga 500. I had plans to program away on the Amiga, and

I did. But I found that I spent most of my time on my C-64.

Even today I keep my PC and my C-64 in totally separate rooms. My PC is in my bedroom because I use it late at night, and my C-64 is in the family room because everybody uses it.

The Amiga and PC are tools. The C-64 is a tool and a friend. My Amiga has only two uses for me: word processing (because it's in an isolated environment) and music. My C-64 does those two things and everything else. I do my taxes on my PC and generally make money with it.

I encourage all 8-bit fans to hold on to your computers. If you love your new multi-megahertz machines so much that you never want to touch a C-64 again, then sell your C-64. If you're like me, and a lot of other people, the novelty wears off quickly.

There are some things that bigger machines can do that the C-64 can't. A person who needs to generate ray-traced 3D objects will go old and gray waiting for a C-64 to make an asteroid field for him. I have a bigger machine and I rarely find myself doing those things. Naturally, those people whose computing needs tap into the extended power of Pentiums and Amigas will lean toward the

bigger machines. But people who just like computers will continue to use the C-64, and miss it if they sell it.

There IS no equivalent to LOADSTAR on any other platform. If you love LOADSTAR, you love the C-64, not just LOADSTAR.

Bottom line: There is no rule that says you can't own more than one type of computer at once. Think about it before you sell.

Some Hints

To plot the cursor on a particular row and column, just do the following in BASIC:

```
POKE214,row:POKE211col:
SYS 58732
```

That is the most efficient way for BASIC. In assembly language the KERNAL PLOT routine is better suited:
```
LDX #row
LDY #column
CLC
JSR $FFF0
```
To TAB backwards:

```
POKE 211,column:SYS 58732
```

In assembly language:
```
LDA #column
STA 211
JSR 58732    ;$E56C
```

IDIOTS AT WORK...
Sign in a gas station: Coke -- 49 cents. Two for a dollar.

I was signing the receipt for my credit card purchase when the clerk noticed that I had never signed my name on the back of the credit card.
She informed me that she could not complete the transaction unless the card was signed. When I asked why, she explained that it was necessary to compare the signature on the credit card with the signature I just signed on the receipt. So I signed the credit card in front of her. She carefully compared that signature to the one I signed on the receipt. As luck would have it, they matched.

IDIOTS & GEOGRAPHY
After interviewing a particularly short-spoken job candidate, I described the person to my boss as rather monosyllabic. My boss said, "Really? Where is Monosyllabia?" Thinking that he was just kidding, I played along and said that it was just south of Elbonia. He replied, "Oh, you mean over by Croatia?"

ADVICE FOR IDIOTS
An actual tip from page 16 of the HP "Environmental, Health & Safety Handbook for Employees: "Blink your eyelids periodically to lubricate your eyes."

IDIOTS IN THE NEIGHBORHOOD
I live in a semi-rural area. We recently had a new neighbor call the local township administrative office to request the removal of the Deer Crossing sign on our road. The reason: Many deer were being hit by cars and he no longer wanted them to cross there.

IDIOTS & COMPUTERS
My neighbor works in the operations department in the central office of a large bank. Employees in the field call him when they have problems with their computers. One night he got a call from a woman in one of the branch banks who had this question: "I've got smoke coming from the back of my terminal. Do you guys have a fire downtown?"

IDIOTS ARE EASY TO PLEASE
I was sitting in my science class, when the teacher commented that the next day would be the shortest day of the year. My lab partner became visibly excited, cheering and clapping. I explained to her that the amount of daylight changes, not the actual amount of time. Needless to say, she was very disappointed.

IDIOTS IN FOOD SERVICE
My daughter went to a local Taco Bell and ordered a taco. She asked the individual behind the counter for "minimal lettuce." He said he was sorry, but they only had iceberg.

AN IDIOT'S IDIOT
Police in Radnor, Pennsylvania, interrogated a suspect by placing a metal colander on his head and connecting it with wires to a photocopy machine. The message "He's lying" was placed in the copier, and police pressed the copy button each time they thought the suspect wasn't telling a lie. Believing the "lie detector" was working, the suspect confessed.

LOADSTAR LETTER #64